

10/524423
REPLACED BY
ART 34 AMDT

CLAIMS

1. A method of monitoring client-usage of digital content provided by a content provider (30) to a client system (10) over a network (40), said method
5 including the step of:

- logging usage information concerning the usage of said digital content individually for each usage to be monitored; and
- performing a security operation to enable identification of at least one of an account and an individual for linking said usage information thereto.

10

2. The method according to claim 1, wherein said step of performing a security operation comprises the step of performing at least part of an authentication of said usage information.

15 3. The method according to claim 2, wherein said step of performing at least part of authentication comprises at least one of:

- signing said usage information by a signing key (166; 466);
- encrypting said usage information by an encryption key (166; 466); and
- appending an authentication tag (174), computed by an authentication key,

20 to said usage information.

4. The method according to claim 1, wherein said usage information is maintained in a log (175) in said client system (10), and said step of performing a security operation comprises the step of storing said log (175) in a tamper-resistant
25 environment associated with said client system (10).

5. The method according to claim 1, wherein said usage information comprises at least one of:

- a representation (172-1) of said client-used digital content;
- 30 - usage quality information (172-2); and

**REPLACED BY
ART 34 AMDT**

- time information (172-N) related to usage of said digital content.

6. The method according to claim 5, wherein said quality information (172-2) comprises at least one of:

- 5 - bandwidth of said used digital content;
- sample rate said digital content;
- data compression of said digital content;
- resolution of said used digital content;
- time information (172-N) related to usage of said digital content; and
- 10 - information of any disruptions during the usage of said digital content.

7. The method according to claim 1, wherein said usage information comprises at least one of:

- form of usage;
- 15 - identification of a content-usage device (300);
- information on payment of said digital content;
- time information related to transmittal of said digital content from said content provider (30) to said client system (10); and
- time information related to reception of said digital content by said client
- 20 system (10).

8. The method according to claim 1, wherein said logging step comprises the steps of:

- tamper-resistantly generating said usage information; and
- 25 - storing said usage information as a log entry (172) in a user-tamper-resistant log (170; 175; 175-1, 175-2).

9. The method according to claim 1, further comprising the step of forwarding said usage information from said client system (10) to an external trusted party for

30 storage therein as log entry (172) in a usage log (170).

10. The method according to claim 1, wherein said digital content is provided as streaming data and said digital data is used by said client system (10), said step of logging usage information comprises the step of for each on-going client-usage of streaming data, intermittently logging usage information during said client-usage.

11. The method according to claim 10, further comprising the step of intermittently forwarding said intermittently logged usage information to said content provider (30) for confirming reception and rendering of the data.

10

12. The method according to claim 11, wherein said usage information is included into receive reports associated with the report mechanism of the streaming protocol used for streaming said data.

13. Client system (10) capable of using digital content provided by a content provider (30) over a network (40), said content-using client system (10) comprising:

- logging agent (150) for logging usage information concerning the usage of said digital content individually for each one of a set of client-usages; and
- means (160; 460) for performing a security operation to enable identification of at least one of an account and an individual for linking said usage information thereto.

14. The client system according to claim 13, wherein said security operation performing means (160; 460) is configured for performing at least part of an authentication of said usage information.

15. The client system according to claim 14, wherein said security operation performing means (160; 460) comprises at least one of:

- means (160; 460) for signing said usage information by a signing key (166; 466);

- means (160; 460) for encrypting said usage information by an encryption key (166; 466); and
- means (160; 460) for computing an authentication tag (172) by an authentication key and appending said authentication tag (172) to said usage
5 information.

16. The client system according to claim 13, wherein said usage information is maintained in a log (175) in said client system (10), and said security operation performing means is configured for storing said log (175) in a tamper-resistant
10 environment associated with said client system (10).

17. The client system according to claim 13, wherein said usage information comprises at least one of:

- a representation (172-1) of said client-used digital content;
- 15 - usage quality information (172-2); and
- time information (172-N) related to usage of said digital content.

18. The client system according to claim 13, wherein said logging agent (150) comprises:

- 20 - means (152) for generating said usage information; and
- means (154; 156) for storing said usage information as a log entry (172) in a usage log (170; 175).

19. The client system according to claim 13, wherein said logging agent (175)
25 further comprises means (156) for forwarding said usage information to an external trusted party for storage therein as a log entry (172) in a usage log (170).

20. The client system according to claim 13, further comprising:

- a usage device (300) adapted for using said provided digital content; and

- a first digital rights management (DRM) agent (130; 330), at least partly implemented in said usage device (300), having functionality for enabling usage of said digital content.

5 21. The client system according to claim 20, further comprising:

- a second DRM agent (230; 430) implemented in said client system (100), having functionality for enabling reception of said digital content from said content provider (30); and

10 - means (210; 310; 410) for communication between said first DRM agent (330) and said second DRM agent (230; 430), said first DRM agent (330) comprising means for transferring a first control signal associated with said usage information to said second DRM agent (230; 430) and said second DRM agent (230; 430) comprises means for processing signal data associated with said first control signal to generate a second control signal, and means for sending said second control signal to said first
15 DRM agent (330) for controlling the digital-content usage process.

22. The client system according to claim 13, further comprising a tamper resistant module, in which said logging agent (150) is implemented.

20 23. The client system according to claim 22, wherein said tamper resistant module is a subscriber identity module (400).

24. The client system according to claim 23, wherein said logging agent (150) is at least partly implemented as an application in an application environment (490)
25 provided by an application toolkit associated with said subscriber identity module (400).

25. The client system according to claim 24, wherein said logging agent application is downloaded into said subscriber identity module (400) over said

network (40) from a network service provider (20; 30) associated with said subscriber identity module (400).

26. The client system according to claim 13, wherein said digital content is provided as streaming data and said client system (10) comprises means (300) for using said streaming data, and said logging agent (150) is configured to, for each on-going client-usage of streaming data, intermittently generate usage information during said client-usage.

27. The client system according to claim 26, further comprising means (156) for intermittently forwarding said intermittently generated usage information to said content provider (30) for confirming reception and usage of the data.

28. The client system according to claim 27, wherein said usage information is included into receive reports associated with the report mechanism of the streaming protocol used for streaming said data.

29. A digital rights management system for assisting in the management of digital content provided to a client system (10) over a network (40), said management system comprising:

- means (22) for receiving, for each one of a set of usages of said digital content by said client system (10), usage information over said network (40), said usage information concerning the usage of said digital content and originating from said client system (10); and
- means (180) for storing said usage information in a usage log (170; 175)), said usage information being subjected to at least part of an authentication procedure to enable identification of at least one of an account and an individual for linking said usage information thereto.

30. The system according to claim 29, further comprising means (22) for downloading a logging agent (150) into said client system (10), said logging agent (150) being operable, when executed in said client system (10), for generating, for each one of said client-usages, usage information concerning the usage of said digital content and forwarding said usage information to said storing means (180).

31. The system according to claim 29, wherein said digital content providing means (32) is configured for providing said digital content to said client system (10) as streaming data, said system further comprising:

10 - means (32) for terminating the flow of streaming data to said client system (10) if no usage information has been received during a predetermined period of time.

32. The system according to claim 29, wherein said system is implemented in a network operator node.

15

33. A tamper-resistant device (400) adapted for cooperation with a client system (10) capable of using digital content provided by a content provider (30) over a network (40), said tamper-resistant device (400) comprising:

20 - logging agent (150) for logging usage information concerning the usage of said digital content individually for each one of a set of client-usages, said tamper-resistant device (400) being associated with means (160; 460) for performing a security operation to enable identification of at least one of an account and an individual for linking said usage information thereto.

25 34. The device according to claim 33, wherein said security operation performing means (160; 460) is provided in said tamper-resistant device (400) for performing at least part of authentication of said usage information.

30 35. The device according to claim 34, wherein said security operation performing means (160; 460) comprises at least one of:

- means (160; 460) for signing said usage information by a signing key (166; 466);
- means (160; 460) for encrypting said usage information by an encryption key (166; 466); and
- 5 - means (160; 460) for computing an authentication tag (172) by an authentication key and appending said authentication tag (172) to said usage information.

36. The device according to claim 33, wherein said usage information is
10 maintained in a log (175) in said tamper-resistant device (400).

37. The device according to claim 33, wherein said logging agent (150) further comprises means (156) for forwarding said usage information to an external trusted party for storage therein as a log entry (172) in a usage log (170).

15

38. The device according to claim 33, wherein said tamper-resistant device (400) is a subscriber identity module.

39. The device according to claim 38, wherein said logging agent (150) is at
20 least partly implemented as an application in an application environment (490) provided by an application toolkit associated with said subscriber identity module (400).

40. The device according to claim 39, wherein said logging agent application is
25 downloaded into said subscriber identity module (400) over said network (40) from a network service provider (20; 30) associated with said subscriber identity module (400).

41. The device according to claim 39, further comprising:
30 - means for downloading upgrades of said logging agent (150).

**REPLACED BY
ART 34 AMDT**

42. A method of monitoring client-usage of a service provided by a service provider (30) to a client system (10), said method including the step of:

- logging usage information concerning the usage of said service individually for each usage to be monitored; and
- 5 - performing a security operation to enable identification of at least one of an account and an individual for linking said usage information thereto.
